

### Abstract

An optical fiber amplifier is considered comprising a mono-mode core, a first cladding around said core and at least a further cladding around said first cladding while said first cladding includes a ring shaped active region doped with rare earth material surrounding said mono-mode core. Advantageously, the first cladding is designed with a radial refractive index following an almost continuous decreasing function for increasing radius. The use of a continuously decreasing refractive index for the cladding at the outer border of the ring shaped active medium optimize the efficiency of the coupling between the core and the cladding.